

RADIO COMMUNICATIONS

Overview

Designated simplex, along with portable and mobile repeater frequencies will play a vital role in mutual aid responses in this state. Pre-determined frequencies can be set aside to cause the least amount of interference for current, and those yet unlicensed, systems. Fixed mutual aid repeaters in the 800 MHz trunked systems are a reality and can be linked to other systems.

At the time this plan was developed (1997), there were more Texas fire agencies operating base, repeater, mobile and portable radio systems on VHF High Band than any other. Therefore, it was deemed appropriate to utilize this as the primary radio communications carrier.

Many metropolitan areas have, or are converting to, 800 MHz trunked systems to better utilize allotted frequencies and have the capability of digital data. A few rural public safety agencies are consolidating their radios with larger public safety providers on shared trunked systems. Provisions are included here to ensure compatible mutual aid frequencies.

Frequencies

The following lists are frequencies are recommended for Texas Fire and Rescue Mutual Aid Radio Communications:

VHF High Band – Base/Mobile/Portable Fire Radio System				
Transmit	Tone*	Receive	Tone*	Name
154.280	-0-	154.280	-0-	Mutual Aid “A”
154.265	-0-	154.265	-0-	Mutual Aid “B”
154.295	-0-	154.295	-0-	Mutual Aid “C”
<p>* As more systems are in place, sub-audible tones may be necessary in certain base radios. At least some Texas Forest Service base radios will be receive toned for 127.3</p>				

800 MHz – Mobile/Portable* (Statewide and Nationwide) Public Safety Radio System				
[*Mobile/Portables Only; Repeaters will be reversed from these]				
Transmit	Tone	Receive	Tone	Name
821.0125	156.7/5A	866.0125	156.7/5A	National Calling Repeater
866.0125	156.7/5A	866.0125	156.7/5A	National Calling Repeater Talk-around
821.5125	156.7/5A	866.5125	156.7/5A	National Tactical Channel 1 Repeater
866.5125	156.7/5A	866.5125	156.7/5A	National Tactical Channel 1 Talk-around
822.0125	156.7/5A	867.0125	156.7/5A	National Tactical Channel 2 Repeater
867.0125	156.7/5A	867.0125	156.7/5A	National Tactical Channel 2 Talk-around
822.5125	156.7/5A	867.5125	156.7/5A	National Tactical Channel 3 Repeater
867.5125	156.7/5A	867.5125	156.7/5A	National Tactical Channel 3 Talk-around
823.0125	156.7/5A	868.0125	156.7/5A	National Tactical Channel 4 Repeater
868.0125	156.7/5A	868.0125	156.7/5A	National Tactical Channel 4 Talk-around

Other Shared Frequencies on VHF-High Band

In the 1970s law enforcement agencies throughout Texas were assigned repeater and direct frequencies. The various Councils of Governments (COGs) administered this. Two of these frequencies are common to all mobile and base law enforcement radios statewide. Many public safety agencies have utilized these frequencies to coordinate interagency communication needs. Please see the following chart.

VHF High Band – Mobile/Portable Law Enforcement Radio System				
Transmit	Tone	Receive	Tone	Name
154.950	-0-	154.950	-0-	Statewide Mobile-to-Mobile
154.950	-0-	155.370	-0-	Statewide Mobile-to-Base
VHF High Band – Base Law Enforcement Radio System				
Transmit	Tone	Receive	Tone	Name
155.370	-0-	155.370	-0-	Statewide Base-to-Base

Agencies not on VHF High Band or 800 MHz Systems

Fire agencies that do not currently have VHF-High Band or 800 MHz trunked systems can still be involved in mutual aid requests and responses. Cross-band, direct frequency monitoring, and other methods are available to maintain communications.

Licensing

All radio systems that are utilized for Texas Fire and Rescue Mutual Aid should be properly licensed by the Federal Communications Commission (FCC). This should be a relatively simple process, as the FCC encourages the use of shared frequencies. Some smaller agencies may solicit unit number assignments from an existing licensed entity.

It also is evident that the Federal Communications Commission (FCC) plans on fragmenting certain frequencies within VHF High Band. Specifications for the future purchase of VHF High Band radios should ensure their capability of operating in these proposed frequency ranges. As the FCC releases new frequencies, the fire service should designate some for mutual aid use. The late Mason Lankford outlined this in his plan of 1996; develop some of the proposed frequencies for Texas Statewide Mutual Aid use to include the following. Note: These frequencies are only anticipated at this time (1997) and should not be construed to be actual until the FCC releases them.

(PROPOSED) Statewide Mutual Aid Repeater Frequencies (VHF High Band)				
Transmit	Tone	Receive	Tone	Name
154.2575	?	(mobile freq.)	?	Texas Mutual Aid Repeater 1 (TexMAR 1)
154.2575	?	154.2575	?	TexMAR 1 Direct
154.3725	?	(mobile freq.)	?	Texas Mutual Aid Repeater 2 (TexMAR 2)
154.3725	?	154.3725	?	TexMAR 2 Direct
154.2875	?	(mobile freq.)	?	Texas Mutual Aid Repeater 3 (TexMAR 3)
154.2875	?	154.2875	?	TexMAR 3 Direct
154.3025	?	(mobile freq.)	?	Texas Mutual Aid Repeater 4 (TexMAR 4)
154.3025	?	154.3025	?	TexMAR 4 Direct

Utilizing Other Agencies

Many local, state and federal agencies have mobile and portable communication systems that can be utilized to coordinate emergency communication needs. This can range from portable radio caches to satellite links.

Amateur radio operators are another source to utilize in emergency responses. Often they have sophisticated communications equipment, are self-sustaining, and can be obtained without a formal request process at no cost to the requesting agency.

Recommended Usage

When initiating a mutual aid request, plan for the incoming agency(ies) response. If one is available, designate a travel frequency for them. This keeps traffic off the frequencies used at the scene and facilitates a clear channel for directions, check-in, diversion, etc. between the incident and responders.

Use Clear Text communications. This avoids confusion often associated with codes not commonly shared or incorrectly used.

Keep transmissions as clear, to-the-point and as brief as possible. Deal immediately with improper or unnecessary communications.

In multiple-day or complex incidents, a written communications plan should be prepared and distributed to the agencies involved.

Pre-plan mutual aid communications usage. Planning for situations involving multiple agencies, multiple incidents, close proximity unrelated incidents, maintaining day-to-day systems, remote operations, non-compatible frequencies, on-site dispatching, etc. are better done *before* the actual event.